

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 07 May 2001 (07.05.01)	
International application No. PCT/US00/23247	Applicant's or agent's file reference 49846-5003WO
International filing date (day/month/year) 25 August 2000 (25.08.00)	Priority date (day/month/year) 25 August 1999 (25.08.99)
Applicant ANTHONY, Thomas, Richard et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

22 March 2001 (22.03.01)

☐ in a notice effecting later election filed with the International Bureau on:

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2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Pascal Piriou
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 49846-5003W0	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 00/ 23247	International filing date (day/month/year) 25/08/2000	(Earliest) Priority Date (day/month/year) 25/08/1999
Applicant GENERAL ELECTRIC COMPANY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.



Certain claims were found unsearchable (See Box I).

3.



Unity of invention is lacking (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.

1



None of the figures.

INTERNATIONAL RCH REPORT

International application No.

/US 00/ 23247

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The abstract is changed as follows:

Line 06: after "medium" insert "(40)";

Line 08: after "press" insert "(10)";

Line 11: after "press" insert "(10)".

INTERNATIONAL SEARCH REPORT

International Application No

PC 00/23247

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B01J3/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, COMPENDEX, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 4 124 690 A (HERBERT M. STRONG) 7 November 1978 (1978-11-07) column 1, line 7 - line 9 column 2, line 11 - line 25 column 2, line 45 - line 61 column 4, line 6 - line 10 column 4, line 30 - line 56 column 5, line 15 - line 36 column 6, line 40 - line 50 column 8, line 49 - line 55 claim 1; figure 1</p> <p style="text-align: center;">--- -/--</p>	1-22

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

* & * document member of the same patent family

Date of the actual completion of the international search

15 December 2000

Date of mailing of the international search report

08/01/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Stevnsborg, N

INTERNATIONAL SEARCH REPORT

International Application No

PC 00/23247

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 134 739 A (PETER CANNON) 26 May 1964 (1964-05-26) column 2, line 21 - line 41 column 3, line 16 - line 24 column 4, line 51 - line 60 column 6, line 66 - line 69 claim 1 ----	1,10,11, 13,19-22
X	R. M. CHRENKO ET AL.: "Transformations of the state of nitrogen in diamond" NATURE., vol. 270, 10 November 1977 (1977-11-10), pages 141-144, XP002155614 MACMILLAN JOURNALS LTD. LONDON., GB ISSN: 0028-0836 page 141 -page 142 ----	1,2,10, 11,13, 19-22
A	T. EVANS & P. RAINEY: "CHANGES IN THE DEFECT STRUCTURE OF DIAMOND DUE TO HIGH TEMPERATURE +HIGH PRESSURE TREATMENT" PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON, A., vol. 344, 1975, pages 111-130,A,B, XP000965244 london, gb cited in the application the whole document ----	1-22
T	A. T. COLLINS ET AL.: "Colour changes produced in natural brown diamonds by high-pressure, high-temperature treatment" DIAMOND AND RELATED MATERIALS, vol. 9, no. 2, March 2000 (2000-03), pages 113-122, XP004195517 amsterdam, nl ISSN: 0925-9635 the whole document -----	1-22

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC 00/23247

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4124690 A	07-11-1978	DE 2732793 A FR 2359071 A GB 1578987 A IE 45102 B IT 1081297 B JP 53025292 A NL 7708107 A SE 7708383 A	26-01-1978 17-02-1978 12-11-1980 16-06-1982 16-05-1985 08-03-1978 24-01-1978 22-01-1978
US 3134739 A	26-05-1964	BE 621736 A CH 433215 A DE 1168396 B FR 1341561 A GB 1014226 A LU 42277 A NL 136558 C NL 282751 A SE 303481 B US 3141855 A	15-04-1967 24-01-1964 29-10-1962 02-09-1968 21-07-1964

PATENT COOPERATION TREATY

JA
JAL
JUT
FF

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

OSTROFF, Johseph S.
MORGAN, LEWIS & BOCKIUS LLP
1800 M Street, N.W.
Washington, D.C. 20036-5869
ETATS-UNIS D'AMERIQUE

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NOV 26 2001

MORGAN, LEWIS & BOCKIUS LLP

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year)

14.11.2001

Applicant's or agent's file reference
49846-5003WO

IMPORTANT NOTIFICATION

International application No.
PCT/US00/23247

International filing date (day/month/year)
25/08/2000

Priority date (day/month/year)
25/08/1999

Applicant

GENERAL ELECTRIC COMPANY et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
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Authorized officer

Dekker, M

Tel. +31 70 340-4046



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11/27/01

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 49846-5003WO		FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US00/23247	International filing date (day/month/year) 25/08/2000	Priority date (day/month/year) 25/08/1999	
International Patent Classification (IPC) or national classification and IPC B01J3/06			
Applicant GENERAL ELECTRIC COMPANY et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 20/03/2001	Date of completion of this report 14.11.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Stevnsborg, N Telephone No. +31 70 340 3019



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/23247

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-19 as originally filed

Claims, No.:

1-22 as originally filed

Drawings, sheets:

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/23247

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	3-8, 12, 14-18
	No:	Claims	1,2,9-11,13,19-22
Inventive step (IS)	Yes:	Claims	
	No:	Claims	3-8,12,14-18
Industrial applicability (IA)	Yes:	Claims	1-22
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document/s/:

D1: US-A-4 124 690

D2: US-A-6 134 739

D3: R.M.Chrenko et al., Nature, Vol. 270, 10 November 1977, pp. 141-144

2. The application does not meet the requirements of Art. 33(2) PCT in that claims 1, 2, 9-11, 13, 19-22 lack novelty.

i. D1 clearly discloses a method for altering the colour of natural diamonds by subjecting these to a high pressure/high temperature treatment comprising the features of claim 1. See col. 1, lines 7-9; col. 4, lines 6-10; col. 4, lines 30-46; claim 1.

ii. D2 and D3 disclose similar methods for obtaining colour change in natural diamonds. See D2, col. 2, lines 21-41; col. 3, lines 16-24; col. 6, lines 66-69; claim 1. See D3, page 141.

iii. Moreover, D1 also discloses the features of claims 2, 9-11, 13, 20-22 when appended to claim 1 and the features of claim 19 when appended to claims 1 and 9. See col. 2, lines 11-25; col. 2, lines 45-61; col. 4, lines 47-56; col. 5, lines 15-36; col. 6, lines 40-50; col. 8, lines 49-55; table I.

iv. The features of claims 10, 11, 13, 19-22 when appended to claim 1 are also disclosed in D2 (see also table in col. 4). D3 discloses the features of claims 2, 10, 11, 13, 19-22 when appended to claim 1 (see also Table 1 and the results section on page 142).

3. The subject matter of claims 3-8, 12, 14-18 appears novel over D1-D3.

However, the application does not meet the requirements of Art. 33(3) PCT in that claims 3-8, 12, 14-18 lack an inventive step.

i. The difference between D1, which is considered to be the closest prior art, and the

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US00/23247

subject matter of claims 3-6 and 15 is the type of natural diamonds selected for the colour alteration process. However, the person skilled in the art would, when presented with the disclosure of D1, not be dissuaded from attempting to subject other types of natural diamonds to the process disclosed, and would therefore by simple experimentation arrive at the subject matter of claims 3-6 and 15.

ii. The subject matter of claims 7 and 8, i.e. the colour of the recovered diamonds, further does not appear to involve an inventive step, insofar, as the person skilled in the art when experimenting with a variety of starting materials would also arrive at product materials exhibiting the features of these claims.

iii. An analogous reasoning applies to the subject matter of claims 14 and 16.

iv. The subject matter of claim 12, i.e. a plurality of treatment cycles, would also appear to be obvious in view of D1, insofar as in order to achieve a more pronounced treatment, the person skilled in the art would know that this routinely can be achieved by e.g. longer exposure to the processing conditions or repeating the process a number of times.

v. Finally, the subject matter of claims 17 and 18 is merely the selection of pressure transmitting media which are well known in the art of high pressure/high temperature processing, and would therefore not comprise an inventive step either.

4. All of claims 1-22 meet the requirements of Art. 33(4) PCT with regard to industrial applicability.

Re Item VII

Certain defects in the international application

1. According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. This requirement is, for example, not met in view of the use of "adjacent cylinder" and "heater tube" for the feature 28.

2. According to the requirements of Rule 11.13(l) reference signs not appearing in the description shall not appear in the drawings, and vice versa. This requirement is not

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US00/23247

met in view of the use of the reference signs 30, 32 and 44 in the description and the use of the related reference signs 30a, 30b, 32a, 32b, 44a and 44b in figure 1.

3. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D3 is not mentioned in the description, nor are these document/s identified therein.

Re Item VIII

Certain observations on the international application

1. Claim 1 does not meet the requirements of Art. 6 PCT in that the term "improve the colour" does not have an exact definition, thereby rendering the scope of the claim unclear.

2. In view of the novelty objection against claim 1, it would appear that this claim does not meet the requirements of Art. 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

3. The objections listed in the section **Re Item V** above notwithstanding claims 2-9 and 16 do furthermore not meet the requirements of Art. 6 PCT.

i. There appears to be no explicit support in the disclosure of the processing of type IaA or Ib natural diamonds.

ii. No disclosure seems to be present for the values of 500 ppm found in claims 4-6.

iii. Moreover, no support is found for the features of claims 8 and 9, i.e. the colour of the recovered diamonds.

iv. The features of claim 16, i.e. a final C Center concentration of less than 2 ppm Nitrogen, also lacks disclosure.

PATENT COOPERATION TREATY

RECEIVED

DEC 11 2000

MORGAN, LEWIS & BOCKIUS LLP

PCT

From the INTERNATIONAL BUREAU

To:

MORGAN, LEWIS & BOCKIUS LLP
Joseph S. Ostroff
1800 M Street, N.W.
Washington, DC 20036-5869
ETATS-UNIS D'AMERIQUE

NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

Date of mailing (day/month/year) 28 November 2000 (28.11.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 49846-5003WO	
International application No. PCT/US00/23247	International filing date (day/month/year) 25 August 2000 (25.08.00)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 25 August 1999 (25.08.99)
Applicant GENERAL ELECTRIC COMPANY et al	

- The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
- An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.**
- The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.**

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
25 Augu 1999 (25.08.99)	60/150,979	US	20 Nove 2000 (20.11.00)

DOCKETED

By *gt* Date *21/8/00*

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. (41-22) 740.14.35</p>	<p>Authorized officer Taieb Akremi <i>T</i></p> <p>Telephone No. (41-22) 338.83.38</p>
---	--

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MAR 12 2001

MORGAN, LEWIS & BOCKIUS LLP

PATENT COOPERATION TREATY

WO 01/14050
PCT/US00/23247JAL
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PP

PCT

NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

OSTROFF, Joseph, S.
Morgan, Lewis & Bockius LLP
1800 M Street, N.W.
Washington, DC 20036-5869
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 01 March 2001 (01.03.01)		
Applicant's or agent's file reference 49846-5003WO		IMPORTANT NOTICE
International application No. PCT/US00/23247	International filing date (day/month/year) 25 August 2000 (25.08.00)	Priority date (day/month/year) 25 August 1999 (25.08.99)
Applicant GENERAL ELECTRIC COMPANY et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

AU, KP, KR, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AG, AL, AM, AP, AT, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EA, EE, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OA, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 01 March 2001 (01.03.01) under No. WO 01/14050

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer J. Zahra Telephone No. (41-22) 338.83.38
--	---

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2001

RECEIVED**PATENT COOPERATION TREATY**JAZ
JSO

MAY 15 2001

MORGAN, LEWIS & BOCKIUS LLP PCT

From the INTERNATIONAL BUREAU

**INFORMATION CONCERNING ELECTED
OFFICES NOTIFIED OF THEIR ELECTION**

(PCT Rule 61.3)

To:

OSTROFF, Joseph, S.
Morgan, Lewis & Bockius LLP
1800 M Street, N.W.
Washington, DC 20036-5869
ETATS-UNIS D'AMERIQUE

TF

Date of mailing (day/month/year) 07 May 2001 (07.05.01)		
Applicant's or agent's file reference 49846-5003WO		IMPORTANT INFORMATION
International application No. PCT/US00/23247	International filing date (day/month/year) 25 August 2000 (25.08.00)	
Priority date (day/month/year) 25 August 1999 (25.08.99)		
Applicant GENERAL ELECTRIC COMPANY et al		

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

AP : GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW

EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

National : AU, BG, CA, CN, CZ, DE, IL, JP, KP, KR, MN, NO, NZ, PL, RO, RU, SE, SK, US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

OA : BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

National : AE, AG, AL, AM, AT, AZ, BA, BB, BR, BY, BZ, CH, CR, CU, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MW, MX, MZ, PT, SD, SG, SI, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW

3. The applicant is reminded that he must enter the "national phase" before the expiration of 30 months from the priority date before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed until 31 months from the priority date for all States designated for the purposes of obtaining a European patent.

DOCKETED

By

Date

JG Date 5/15/01

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

Pascal Pirou

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

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From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

MORGAN, LEWIS & BOCKIUS LLP

PCT

To:

OSTROFF, Joseph S.
MORGAN, LEWIS & BOCKIUS LLP
1800 M Street, N.W.
Washington, D.C. 20036-5869
ETATS-UNIS D'AMERIQUE

WRITTEN OPINION

(PCT Rule 66)

Date of mailing (day/month/year) 08.08.2001	
Applicant's or agent's file reference 49846-5003WO	REPLY DUE within 2 month(s) from the above date of mailing
International application No. PCT/US00/23247	International filing date (day/month/year) 25/08/2000
Priority date (day/month/year) 25/08/1999	
International Patent Classification (IPC) or both national classification and IPC B01J3/06	
Applicant GENERAL ELECTRIC COMPANY et al.	

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain document cited
 - VII ☒ Certain defects in the international application
 - VIII ☒ Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 25/12/2001.

DOCKETED

By KJ Date 8/15/01
Previously docketed

Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer / Examiner Stevnsborg, N Formalities officer (incl. extension of time limits) Dekker, M Telephone No. +31 70 340 4046
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WRITTEN OPINION

International application No. PCT/US00/23247

I. Basis of the opinion

1. With regard to the **elements** of the international application (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"):

Description, pages:

1-19 as originally filed

Claims, No.:

1-22 as originally filed

Drawings, sheets:

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

WRITTEN OPINION

International application No. PCT/US00/23247

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1,2,9-11,13,19-22 (No);3-8,12,14-18 (Yes)
Inventive step (IS)	Claims	3-8,12,14-18 (No)
Industrial applicability (IA)	Claims	1-22 (Yes)

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/US00/23247

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document/s/:

D1: US-A-4 124 690

D2: US-A-6 134 739

D3: R.M.Chrenko et al., Nature, Vol. 270, 10 November 1977, pp. 141-144

2. The application does not meet the requirements of Art. 33(2) PCT in that claims 1, 2, 9-11, 13, 19-22 lack novelty.

i. D1 clearly discloses a method for altering the colour of **natural** diamonds by subjecting these to a high pressure/high temperature treatment comprising the features of claim 1. See col. 1, lines 7-9; col. 4, lines 6-10; col. 4, lines 30-46; claim 1.

ii. D2 and D3 disclose similar methods for obtaining colour change in **natural** diamonds. See D2, col. 2, lines 21-41; col. 3, lines 16-24; col. 6, lines 66-69; claim 1. See D3, page 141.

iii. Moreover, D1 also discloses the features of claims 2, 9-11, 13, 20-22 when appended to claim 1 and the features of claim 19 when appended to claims 1 and 9. See col. 2, lines 11-25; col. 2, lines 45-61; col. 4, lines 47-56; col. 5, lines 15-36; col. 6, lines 40-50; col. 8, lines 49-55; table I.

iv. The features of claims 10, 11, 13, 19-22 when appended to claim 1 are also disclosed in D2 (see also table in col. 4). D3 discloses the features of claims 2, 10, 11, 13, 19-22 when appended to claim 1 (see also **Table 1** and the **results** section on page 142).

3. The subject matter of claims 3-8, 12, 14-18 appears novel over D1-D3. However, the application does not meet the requirements of Art. 33(3) PCT in that claims 3-8, 12, 14-18 lack an inventive step.

**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/US00/23247

- i. The difference between D1, which is considered to be the closest prior art, and the subject matter of claims 3-6 and 15 is the type of **natural** diamonds selected for the colour alteration process. However, the person skilled in the art would, when presented with the disclosure of D1, not be dissuaded from attempting to subject other types of **natural** diamonds to the process disclosed, and would therefore by simple experimentation arrive at the subject matter of claims 3-6 and 15.
 - ii. The subject matter of claims 7 and 8, i.e. the colour of the recovered diamonds, further does not appear to involve an inventive step, insofar, as the person skilled in the art when experimenting with a variety of starting materials would also arrive at product materials exhibiting the features of these claims.
 - iii. An analogous reasoning applies to the subject matter of claims 14 and 16.
 - iv. The subject matter of claim 12, i.e. a plurality of treatment cycles, would also appear to be obvious in view of D1, insofar as in order to achieve a more pronounced treatment, the person skilled in the art would know that this routinely can be achieved by e.g. longer exposure to the processing conditions or repeating the process a number of times.
 - v. Finally, the subject matter of claims 17 and 18 is merely the selection of pressure transmitting media which are well known in the art of high pressure/high temperature processing, and would therefore not comprise an inventive step either.
4. All of claims 1-22 meet the requirements of Art. 33(4) PCT with regard to industrial applicability.

Re Item VII

Certain defects in the international application

1. According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. This requirement is, for example, not met in view of the use of "adjacent cylinder" and "heater tube" for the feature 28.

2. According to the requirements of Rule 11.13(I) reference signs not appearing in the description shall not appear in the drawings, and vice versa. This requirement is not met in view of the use of the reference signs 30, 32 and 44 in the description and the use of the related reference signs 30a, 30b, 32a, 32b, 44a and 44b in figure 1.

3. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D3 is not mentioned in the description, nor are these document/s identified therein.

Re Item VIII

Certain observations on the international application

1. Claim 1 does not meet the requirements of Art. 6 PCT in that the term "improve the colour" does not have an exact definition, thereby rendering the scope of the claim unclear.

2. In view of the novelty objection against claim 1, it would appear that this claim does not meet the requirements of Art. 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

3. The objections listed in the section **Re Item V** above notwithstanding claims 2-9 and 16 do furthermore not meet the requirements of Art. 6 PCT.

i. There appears to be no explicit support in the disclosure of the processing of type **IaA** or **Ib** natural diamonds.

ii. No disclosure seems to be present for the values of **500 ppm** found in claims 4-6.

iii. Moreover, no support is found for the features of claims 8 and 9, i.e. the **colour** of the recovered diamonds.

iv. The features of claim 16, i.e. a final C Center concentration of less than 2 ppm Nitrogen, also lacks disclosure.

**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/US00/23247

In order to facilitate the examination of the conformity of the amended application with the requirements of Article 34(2)(b) PCT, the applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see also Rule 66.8(a) PCT).

If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.